

WHAT IS CLAIMED IS:

1. A purified complex comprising endotoxin bound to MD-2.
- 5 2. The complex of claim 1, wherein the endotoxin is a wild-type endotoxin.
3. The complex of claim 1, wherein the endotoxin is a gram-negative bacterial endotoxin.
- 10 4. The complex of claim 3, wherein the gram-negative bacterium is a *Neisseria*, *Escherichia*, *Pseudomonas*, *Haemophilus*, *Salmonella*, or *Francisella* bacterium.
5. The complex of claim 4, wherein the gram-negative bacterium is *Neisseria meningitidis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Haemophilus influenzae*,
15 *Salmonella typhimurium*, or *Francisella tularensis*.
6. The complex of claim 1 having a molecular weight of about 25,000.
7. The complex of claim 1, wherein the complex consists essentially of one
20 molecule of endotoxin bound to one molecule of MD-2.
8. The complex of claim 1, wherein the complex is soluble in water.
9. The complex of claim 1, wherein the complex binds to TLR4.
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10. The complex of claim 1, wherein the complex produces TLR4-dependent activation of cells.

11. The complex of claim 10, wherein the complex produces a half maximal TLR4-dependent activation of cells at a concentration of less than 1 nM of the complex.
- 5 12. The complex of claim 11, wherein the complex produces a half maximal TLR4-dependent activation of cells at a concentration of about 30 pM or less of the complex.
13. The complex of claim 1, wherein the endotoxin is hexa-acylated.
- 10 14. The complex of claim 1, wherein the endotoxin is an under-acylated endotoxin.
- 15 15. The complex of claim 14, wherein the endotoxin is a tetra-acylated endotoxin.
16. The complex of claim 14, wherein the endotoxin is a penta-acylated endotoxin.
- 20 17. The complex of claim 14, wherein the complex produces less TLR4-dependent activation of cells as compared to a complex comprising an endotoxin that is hexa-acylated.
18. A composition comprising the complex of claim 1.
- 25 19. The composition of claim 17, further comprising a pharmaceutically acceptable carrier.